Claims

[c1]   1. A vision system for a vehicle comprising:

a light source generating an illumination beam;

a receiver having a pixel array for capturing an image in response to at least a reflected portion of said illumination beam, said image corresponding to a first horizontal field of view (FOV) angle; and

a controller coupled to said light source and said receiver and receiving a vehicle speed input, said controller selecting a portion of said image as a non-linear function of said vehicle speed to generate a second horizontal FOV angle for displaying to the vehicle operator.

[c2]   2. A vision system according to claim 1 wherein said receiver is a CMOS or CCD camera.

[c3]   3. A vision system according to claim 1 wherein said light source is a non-incandescent light source.

[c4]   4. A vision system according to claim 1 wherein the second FOV angle decreases with respect to the first FOV angle as the vehicle speed increases.

[c5]   5. A vision system according to claim 1 wherein the second FOV angle is the same as the first FOV angle up to a

low speed (LS) threshold value.

[c6]   6. A vision system according to claim 5 wherein the second FOV angle decreases with respect to the first FOV angle as the vehicle speed increases between said LS threshold value and a high speed (HS) threshold value.

[c7]   7. A vision system according to claim 6 wherein the second FOV angle is fixed at a smaller angle with respect to the first FOV angle beyond the HS threshold value.

[c8]   8. A vision system according to claim 7 wherein the LS threshold value is less than or equal to 30 mph and the HS threshold value is greater than or equal to 50 mph.

[c9]   9. A vision system according to claim 7 wherein the second FOV angle is between $5\text{--}15^0$ above the HS threshold value.

[c10]   10. A vision system according to claim 5 wherein the second FOV angle is between $10\text{--}30^0$ below the LS threshold value.

[c11]   11. A vision system according to claim 1 comprising a display for displaying said image corresponding to said second FOV angle to the vehicle operator.

[c12]   12. A vision system according to claim 11 wherein said display is a heads-up-display.

[c13]   13. An active night vision system for a vehicle comprising:

a light source generating an illumination beam;

vehicle sensors for indicating first and second vehicle operating parameters;

a receiver having a pixel array for capturing an image in response to at least a reflected portion of said illumination beam, said image corresponding to a first horizontal field of view (FOV) angle; and

a controller coupled to said light source, said receiver and said vehicle sensors, said controller selecting a portion of said image as a non-linear function of said first vehicle operating parameter and said second vehicle operating parameter to generate a second horizontal FOV angle for displaying to the vehicle operator.

[c14]   14. An active night vision system according to claim 13 wherein said receiver is a CMOS or CCD camera.

[c15]   15. An active night vision system according to claim 13 wherein said first vehicle operating parameter is vehicle speed and said second vehicle operating parameter is vehicle change of direction.

[c16]   16. An active night vision system according to claim 15 wherein the second FOV angle decreases with respect to

the first FOV angle as the vehicle speed increases.

[c17]   17. An active night vision system according to claim 15 wherein the second FOV angle shifts with respect to the first FOV angle in the same direction as the vehicle change of direction.

[c18]   18. An active night vision system according to claim 16 wherein the second FOV angle shifts with respect to the first FOV angle in the same direction as the vehicle change of direction.

[c19]   19. An active night vision system according to claim 13 comprising a display for displaying said image corresponding to said second FOV angle to the vehicle operator.

[c20]   20. An active night vision system according to claim 19 wherein said display is a heads-up-display.